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1. (Amended) An electromechanical drive or sensor element having a layer structure, which comprises

- a plurality of piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)],
- an electrode layer [(16a-e; 26a-d)] which is arranged between two mutually facing surfaces of directly adjacent piezoelectric ceramic layers, and
- an electrical connector [(18a,b; 28a,b; 58a,b)] for making electrical contact with the electrode layer [(16a-e; 26a-d)],
  - in which case the connector [(18a,b; 28a,b; 58a,b)] is likewise arranged and is passed out between the two mutually facing surfaces of the piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)].

2. (Amended) An electromechanical drive or sensor element having a layer structure,

- having a plurality of piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)],
- in which mutually facing surfaces of directly adjacent piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)] are metallized by application of a metal coating,
  - which are joined together by means of diffusion welding,
  - so that an electrode layer [(16a-e; 26a-d)] is formed by the metallized surfaces,
    - with which contact can be made via an electrical connector[(18a,b; 28a,b; 58a,b)].

3. (Amended) The drive or sensor element as claimed in [one of claims 1 or 2] claim 1, in which a groove [14-a-d; 24a-d; 56a-f] is provided in at least one of the two mutually facing surfaces of the piezoelectric ceramic layers [12a-f; 22a-d; 41a-f] and at least partially holds the electrical connector [18a, b; 28a, b; 58a, b].

4. (Amended) The drive or sensor element as claimed in claim 3, in which the connector [(18a,b; 28a,b; 58a,b)] is a wire which extends beyond the surfaces of the piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)].

5. (Amended) The drive or sensor element as claimed in [one of claims 3 or 4] claim 3 having at least three piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)] and at least two grooves [(14a-d; 24a-d; 56a-f)], in which these grooves [(14a-d; 24a-d; 56a-f)] are arranged offset with respect to one another and with respect to a longitudinal axis [(29)] of the drive or sensor element.

6. (Amended) The drive or sensor element as claims [in one of claims 4 or 5] claim 4 which is in the form of a wire and is a wire having a rippled or zigzag structure.

7. (Amended) The drive or sensor element as claimed in [one of claims 1 to 6] claim 1 having piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)] composed of PZT material.

8. (Amended) The drive or sensor element as claimed in [one of claims 1 to 7] claim 1 having piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)] composed of  $\text{PbMg}_{0.308}\text{Nb}_{0.617}\text{Ti}_{0.075}\text{O}_3$ .

9. (Amended) The drive or sensor element as claimed in [one of claims 1 to 8] claim 1 having piezoelectric ceramic layers [(12a-f; 22a-d; 41a-f)] composed of a material having a Curie temperature of more than  $400^\circ\text{C}$ , for example composed of  $\text{Na}_{0.5}\text{Bi}_{4.5}\text{Ti}_4\text{O}_{15}$  or  $\text{Bi}_3\text{TiNbO}_9$ .

10. (Amended) The drive or sensor element as claimed in [one of claims 1 to 9] claim 1 having electrode layers [(16a-e; 26a-d)] composed of a metallic material having a Curie temperature of more than  $400^\circ\text{C}$ .

11. (Amended) The drive or sensor element as claimed in [one of claims 1 to 10] claim 1 having electrode layers [(16a-e; 26a-d)] composed of bismuth-titanate.

12. (Amended) The drive or sensor element as claimed in [one of claims 4 to 11] claim 4 having connectors [(18a,b; 28a,b; 58a,b)] which are in the form of wires and are composed of a metallic material having high-temperature stability at more than  $250^\circ\text{C}$ .

13. (Amended) The drive or sensor element as claimed in [one of claims 4 to 11] claim 4 having connectors [(18a,b; 28a,b; 58a,b)] which are in the form of wires and are composed of a material which contains silver and contains stainless steel, or of such a material which contains a nickel alloy.

14. (Amended) A method for producing an electromechanical drive or sensor element having a layer structure, which comprises the following steps:

- production of ceramic layers [(12a-f; 22a-d; 41a-f)] composed of electrically active material using a method which is normal in ceramic technology, having desired dimensions and having a margin of 2-3 mm for each dimension taking account of the following mechanical machining;
- grinding the ceramic layers [(12a-f; 22a-d; 41a-f)] until a predetermined thickness of, for example, 0.15 to 0.3 mm [sic] is reached;
- cutting a groove [(14a-d; 24a-d; 56a-f)] in one face of the ceramic layers [(12a-f; 22a-d; 14a-f)] which is to be metallized;

-- in which case the depth of the groove [(14a-d; 24a-d; 56a-f)] must be no deeper than half the thickness of the ceramic layer [(12a-f; 22a-d; 41a-f)] under consideration;

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- coating at least one face of the ceramic layers [(12a-f; 22a-d; 41a-f)] with metal by applying a paste containing silver twice and subsequent heat treatment at a temperature of 800-820°C;

- applying adhesive to the metallized surfaces of two ceramic layers [(12a-f; 22a-d; 41a-f)] using cellulose adhesive;

- diffusion welding of the layers to which adhesive has been applied by heat treatment at a temperature of 780-800°C and single-axis compression at a pressure of 3-5 kg/cm<sup>2</sup> over a period of 3 hours and cooling to room temperature;

- drawing in each case one connector wire [(18a,b; 28a,b; 58a,b)] into a groove [(14a-d; 24a-d; 56a-f)];

- polarization of the drive or of the sensor element by the action of an electrical field on the wires [(18a,b; 28a,b; 58a,b)] at high temperature;

- connection of the same poles of the drive or of the sensor element;

- checking of the desired parameters and piezoelectric characteristics of the drive or of the sensor element.

15. (Amended) A level limit switch [(70)] having a drive and having a sensor element as claimed in [one of claims 1 to 14] claim 1.

16. (Amended) The level limit switch [(70)] as claimed in claim 15, in which the sensor element is separated from the drive by a non-polarized ceramic layer [(82d)].

17. (Amended) An acceleration sensor [(40)] having a sensor element as claimed in [claims 1 to 14] claim 1.